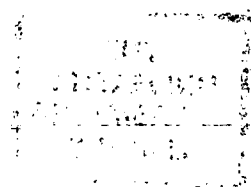


INTERPERSONAL COGNITIVE PROBLEM-SOLVING WITH CHRONIC
SCHIZOPHRENICS.



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SCHIZOPHRENICS.

by

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ABSTRACT

This study evaluated the effects of an interpersonal cognitive problem-solving programme on chronic schizophrenic inpatients, to see whether it was more effective in increasing problem-solving skills and adaptive functioning on the ward than medication alone or medication and group meetings.

Thirty chronic schizophrenic inpatients were matched in trios for age, education, time since first diagnosis and problem-solving skills. Each member of a trio was allocated to either the problem-solving group, the group control for attention and structure or the no treatment group. The experimental and control group met each week for 45 minutes for between 6 and 9 weeks. The experimental group were trained in the 4 stages of problem-solving: recognising problems, producing alternative solutions, being aware of the consequences of their actions and choosing solutions to interpersonal problems.

Problem-solving measures were taken one week before, one week and 2 months after the intervention. Also nurses on the subjects' wards completed NOSIE-30s before and after the programme and at follow-up, as a measure of how much if at all subjects' behaviour changed on the ward.

No significant difference was found between the groups on any of the measures. The experimental group's problem-solving skills did not improve significantly nor did their behaviour on the ward.

Comparison with similar studies are made and improvements suggested. Recommendations are made for interpersonal problem-solving's role in the treatment of chronic schizophrenics.

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INTRODUCTION

The main purpose of this study is to evaluate interpersonal problem-solving therapy with medicated chronic schizophrenic inpatients and to see whether it is more beneficial than medication alone or medication and group meetings. More specifically it is to discover whether subjects improve in the 4 stages of problem-solving (recognizing problems, producing alternative solutions, being aware of the consequences of their actions and choosing solutions to interpersonal problems) after problem-solving therapy and whether improvement in those areas correlates with more adaptive functioning in their environment. Subject characteristics that predict a favourable treatment response or otherwise will be examined. Although schizophrenics may be expected to benefit from this form of treatment as they are a particularly withdrawn subgroup of the chronic psychiatric inpatient population, other patients may also benefit. It was thought better to investigate the outcome of one diagnostic group, rather than have a mixed group, so that the programme could cater for their specific needs. It also allowed the assessment of the feasibility of this treatment in a group situation with schizophrenics.

DEFINITION OF SCHIZOPHRENIA

Schizophrenia has been described as a disease (Kraepelin, 1971), a syndrome (Spitzer, Sheehy and Endicott, 1977) and a learned role (Scheff, 1966) despite disagreement on the primary symptoms and the process and etiology of the disorder being essentially unknown. The accumulation of evidence for a genetic component (Gottesman and Shields, 1972, Heston, 1966, Wender, Rosenthal, Kety, Schulsinger and Welner, 1974) suggest that it is more than a learned role. More recently there has been criticism of the genetic theory by Lewontin, Rose and Kamin (1984) and more support for multifactorial models which encompass a genetic/environmental interaction (Arieti, 1979, Smith and Oatley, 1985). However as this type of model is difficult to test a useful way of looking at schizophrenia is as an 'open scientific construct' (Kendell, 1975 and Meehl, 1972). That is as a hypothetical construct of an internal event inferred from observable behaviour and its context.

The DSM-III (American Psychiatric Association, 1980) and the British Glossary of Mental Disorders (General Register Office, 1968) define schizophrenia as a disorder characterised by disturbances of thinking, mood and behaviour. The disturbance of thinking includes a person's beliefs that his/her thoughts, feelings and behaviour are known by others; that his/her thoughts, moods and behaviour are controlled by external natural or supernatural forces. Auditory hallucinations are common; usually voices are heard commenting on the person's thoughts and actions. Many schizophrenics display thought-disorder in which peripheral and

irrelevant elements of a situation, usually inhibited in 'normal directed mental activity' (British Glossary), prevail. Neologisms may also be used, making communications with others difficult to impossible. Thought blocking and withdrawal are frequent. The person often hears his/her thoughts spoken aloud. Perception is usually disturbed so that irrelevant features become important and when accompanied by feelings of passivity lead the person to believe innocuous objects and situations have a special, usually sinister meaning especially intended for them. Mood changes include ambivalent, constricted and inappropriate emotional responsiveness and loss of empathy with others. Behaviour may be withdrawn, regressive and bizarre. There is inevitably a lack of insight into their problems, in that they do not recognize that their mental processes are producing the psychotic symptoms. No single symptom or set of symptoms completely define the construct.

There is a wide range of symptom variability amongst people classified as schizophrenic and so the disorder has been divided into subclasses (e.g. simple, hebephrenic, catatonic and paranoid). One of the most useful distinctions is made by Andreasen, Olsen, Dennert and Smith (1982) and Crow, Cross, Johnstone and Owen (1982). They divide schizophrenics into homogeneous subgroups with a negative or positive syndrome. The negative syndrome is characterized by negative symptoms, brain damage and a chronic deteriorating course; the positive syndrome

by positive symptoms, no brain damage and an acute, remitting course (see Jackson and Minas, 1985).

DRUG TREATMENT

Since the 1950s schizophrenia has been treated with anti-psychotic drugs (Andrews, 1984); the phenothiazines, butyrophenones and thioxanthenes, which decrease bizarre behaviour and incoherent speech and increase sociable behaviour; however they have little effect on motivation, flat affect and poverty of speech (Heinrichs, Hanlon and Carpenter, 1984). The neuroleptics' lack of effect on negative symptoms has been disputed by Goldberg (1985).

The main difference between the drugs is their side effects, which include drowsiness, restlessness, constipation, nausea, dryness of mouth, dizziness, tremor and facial rigidity (Lehmann, 1975) and in the long term tardive dyskinesia, an extrapyramidal syndrome, where the patients involuntarily smack their lips, stick out their tongues and move their faces and extremities in unusual ways. Five per cent of patients who have been on neuroleptics for several years develop this syndrome and the figure may be as high as 50% for patients over 60 years of age (Toenniesson, Casey and McFarland, 1985). It appears some people suffering from schizophrenia are more vulnerable than others to developing tardive dyskinesia (Wegner, Catalano, Gibraltar and Kane, 1985). Unlike other side effects there is no specific treatment for the syndrome. Clozapine, a member of the dibenzazepine group has

been effective in treating schizophrenia and it does not produce extrapyramidal side effects (Shopsin, Klein, Aaronson and Collora, 1979) but it is implemented in hypersalivation, increased body temperature and a serious drop in white blood cells. At least 7% of schizophrenics do not improve on anti-psychotic medication (Leff and Wing, 1971). Those that do improve can expect that the drugs will be less effective over time (Hollister, 1984).

The use of neuroleptics has allowed many schizophrenics to live in the community. The chances of relapse are about 35% for those on drugs compared to 80% on a placebo (Leff and Wing, 1971). There is a greater likelihood of relapse where the schizophrenic returns to an environment where s/he is confronted by negative comments and hostility and has extensive contact with those expressing themselves in this way (Brown, Birley and Wing, 1972, Doane, Falloon, Goldstein and Mintz, 1985, Moline, Singh, Morris and Meltzer, 1985, and Vaughn and Leff, 1976); medication provides some protection from a maladaptive response to this.

THE CASE FOR PSYCHOLOGICAL INTERVENTION

Although neuroleptics relieve many of the symptoms of schizophrenia and reduce the likelihood of readmission to hospital they do so at the risk of side effects such as nausea and dizziness, tardive dyskinesia and a lessening of effect over a long period of time. Additionally, they do not equip the person with social skills or the ability to resolve interpersonal

difficulties in their family and social sphere. This is an important consideration with chronic schizophrenics as one study has found that more than 50% of a sample of chronic psychiatric patients had major functional deficits in social and personal areas (Sylph, Ross and Kedward, 1977). There is a need for psychosocial programmes to help the schizophrenic in these areas before s/he leaves hospital, as well as in the community. There is some evidence supporting the efficacy of behavioural family therapy combined with medication in reducing relapse rate for people previously hospitalized with a diagnosis of schizophrenia (Falloon, Boyd, McGill, Williamson, Razani, Moss, Gilderman and Simpson, 1985). Such psychological intervention may lead to the reduction of medication necessary, thus reducing the risk of tardive dyskinesia developing. It may be particularly useful for those patients who do not respond to anti-psychotic drugs.

Many schizophrenics are still institutionalized for long periods of time for reasons such as their behaviour, family environment, poor judgement and psychotic disorganization. Wing and Brown (1970) found that in the 1960s the ward environments of large institutions were impoverished and there was a correlation between this and the severity of the schizophrenic patients' disturbance (Sylph et al. (1977) have found that chronic schizophrenics deteriorate more in this environment than other patients). The relationship did not seem attributable to the original severity of the patients' condition, and improvement in the ward environment was followed by clinical improvement in some patients' behaviour.

Behavioural programmes have been the most successful psychological interventions with long term patients so far (Kazdin, 1976, Liberman, 1972) especially token economy wards. In such wards various social and occupational activities are reinforced by tokens which the patient can later exchange for desired items or participation in popular activities. When this system is instituted, occupational performance, personal care and social skills improve. However not all patients respond to this system and it does not usually generalize to the environment outside of the hospital (Ayllon and Azrin, 1965).

Paul and Lentz (1977) found behavioural methods were more effective for schizophrenic patients than the milieu approach or standard hospital treatment. But those subjects who were discharged experienced a decline in level of functioning and aftercare consultation services were necessary to reverse the deterioration. These results suggest that hospital environment has an effect on schizophrenic patients' functioning; maintenance medication alone was unable to prevent patients deteriorating after discharge. The post hospital environment had a significant impact on the patient treatment behaviour, determined partially by the interaction with the inpatient treatment programme (there was a greater deterioration in the patients who had participated in the two psychosocial programmes) and finally further psychosocial intervention reversed the trend. Overall the patients benefited from the psychosocial input.

It is evident that there is a place for psychological intervention in the treatment of schizophrenia particularly in the area of interpersonal interaction. Problems in this area correlate highly with relapse rates (Brown et al., 1972 and Vaughn and Leff, 1976).

INTERPERSONAL PROBLEMS

There is evidence that many schizophrenics have more interpersonal problems than 'normals' all through their lives and this is greater than their problems with impersonal tasks (Bannister and Salmon, 1966).

Research focusing on the characteristics of schizophrenics prior to the onset of the disorder (follow up of guidance clinic population, follow back of adult schizophrenics, using archival data and high risk method) suggests that poor premorbid schizophrenics had low childhood IQ (Aylward, Walker and Bettes, 1984). Watt (1978) found a difference in the social behaviour of pre-schizophrenics compared to 'normal' children in that the boys were more obsessive and disagreeable and the girls were more introverted and passive. In the high risk studies - looking at those children with one (or more!) schizophrenic parent(s) - it has been found that the children perform similarly to adult schizophrenics. They do poorly on object sorting (Oltmanns, Weintraub, Stone and Neale, 1978), span of comprehension (Asarnow, Steffy, Maccrimon and Cleghorn, 1978 and Asarnow, Steffy and Waldman, 1985) (with adults, Neale, 1971) and reaction time tests

(Marcus, 1972, cited in Neale and Oltmanns, 1980, p. 370) (with adults, Manuzza, Kietzman, Berenhaus, Ramsey, Zubin and Sutton, 1984). High risk children were more distractable than 'normal' children and those with a parent with bipolar disorder but similar to those with a parent with unipolar disorder. There appeared to be an attention deficit in controlled information processing (Harvey, Winters, Weintraub and Neale, 1981) (with adults, Oltmanns, 1978). High risk children also display low social competence (Mednick and Schulsinger, 1968, and Weintraub, Prinz and Neale, 1978). However, Rolf (1972) found that the children of schizophrenics were no more socially incompetent than the children of depressives and children with behavioural problems but of course all of these were more socially incompetent than 'normal' children.

Various studies and experiments with adults have found that schizophrenics are competent speakers but their performance is marred because they do not consider the task of the listener who must interpret their verbal messages. They often assume the listener has more knowledge available than is actually the case (Brown, 1973, Cohen and Camhi, 1967, Rochester, Martin and Thurston, 1977 and Smith, 1970).

The above may give the impression that social incompetence is a fundamental aspect of schizophrenia but this is not necessarily the case. Hallucinations and cognitive disturbances may be the direct expressions of a biological dysfunction and lack of social skills may derive from these primary problems; the reactions of family members and institutionalization may be seen as tertiary

problems. Medication can alleviate the primary problems to a certain extent and investigations continue into which are the most beneficial psychosocial interventions to cope with the secondary and tertiary problems (Paul and Lentz, 1977 and Bellack, Turner, Hersen and Luber, 1984). This study is going to evaluate one such intervention, problem-solving therapy (Spivack, Platt and Shure, 1976).

PROBLEM-SOLVING THERAPY

Problem-solving therapy teaches the individual how to identify and cope with problems in her/his interpersonal interactions. The training exercises comprising the problem-solving programme, group themselves into 4 stages; these are the ability to 1) recognise problems, 2) define problems, 3) think of alternative solutions to problems, 4) decide which of the alternative solutions is the best way to solve the problem (Siegel and Spivack, 1976). Nezu and D'Zurilla (1981) found that training in problem definition and decision making together improved problem-solving in 'normal' populations.

Spivack, Platt and Shure (1976) found that young children who had trouble relating to their peers i.e. they were withdrawn or aggressive, had interpersonal problem-solving deficits compared to other children. This deficit was unrelated to their impersonal problem-solving ability or I.Q. Gotlib and Asarnow (1979) confirm that interpersonal interaction ability involves different cognitive processes from impersonal task ability. The

interpersonal problem-solving programme Spivack et al. (1976) developed for children as young as 4, was found to benefit withdrawn children more than those who were aggressive. Other studies have found that groups such as adolescent and adult psychiatric patients (Platt, Altman and Altman, 1973, cited Siegel and Spivack, 1976, p 368) and heroin addicts (Platt, Scura and Hannon, 1973) are deficient in interpersonal problem-solving skills compared to 'normals'.

Siegel and Spivack (1976) extended the programme to chronic psychiatric patients who were mainly psychotic. They conducted 2 pilot studies; the first with 7 volunteer chronic patients, was to ascertain whether the programme had interest for adults and could hold their attention. The 4 patients, who completed the 12 exercises, professed interest and were observed to be interested and involved. In the second pilot study there was an experimental and no treatment control group, each with 6 patients.

In both pilot studies subjects were seen individually. The pre- and post-treatment dependent measures were similar to the ones used in this study (see Method). Because of the small number of subjects and some dropouts, statistical analysis was inconclusive, but the experimental group improved on optional thinking whereas the controls became less adept during this period. Anecdotal evidence suggests the experimental subjects profited from the programme in that they were using the new skills in interpersonal situations.

Siegel and Spivack recommend that future studies should utilize more subjects and small groups of 3 to 4 patients. They do warn that some patients will not benefit from the programme including those that are acutely disturbed and unable to concentrate and brain damaged and intellectually disabled patients, who become confused as the programme is generally too complex for them.

Considering the above it seems that chronic schizophrenic inpatients would benefit from a similar programme to that of Siegel and Spivack, in that they are often withdrawn and problem-solving therapy helps withdrawn people in particular. They may not have learnt interpersonal problem-solving skills in childhood because of lack of a parental model or an inability to benefit from modelling or it may be that more than modelling is needed. Inpatients could use their problem-solving skills in the ward situation. The programme could be extended to a group situation as the authors suggest. This would encourage interpersonal interaction as well as being more cost effective.

SCHIZOPHRENICS IN GROUPS

The evidence accumulated from comparing the effect of 'no group therapy' with group therapy on hospitalized schizophrenics favours 'no group therapy'. 'Parloff and Dies (1977) indicate that 5 out of 7 studies showed no advantage to group therapy. A subsequent review by Mosher and Keith (1980) although reaching

similar conclusions found that better results occurred with more structured groups' (Maxmen, 1984, p. 355).

Ludwig (1976) found that structure was an important factor for schizophrenics in a group situation. Testing to see whether non specific common denominators rather than specific content might cause change within a group, Ludwig devised a programme where chronic schizophrenics were exposed for 6 weeks to 1) attention 2) structure 3) attention and structure 4) minimum attention and structure. For both withdrawn and active patients the combination of attention and structure produced the greatest improvement overall. The withdrawn patients deteriorated in the unstructured condition, which most closely approximated a custodial ward setting. The active patients, who were predominantly paranoid, functioned worse under conditions of structure and limit setting. Ludwig also found that 'the larger the group of chronic schizophrenics, the greater the forces working towards group homeostasis or resistance to change' (p. 157) suggesting that schizophrenics' goals are peace and quiet.

Although there are advantages to conducting therapy in groups, such as interaction amongst the members and cost effectiveness, Ludwig's findings must be taken into account. Therefore as problem-solving therapy is structured it is necessary to have controls meeting in a structured, small group situation to control for group/attention/structure variables as well as a no treatment group who receive the standard hospital treatment. The group will need to be leader-centred as schizophrenics are highly

unlikely to interact amongst themselves without prompting (Walker, Hedberg, Clement and Wright, 1981). The leader must be aware of the difficulties schizophrenics experience, concentrating and processing information, and keep distractions to a minimum and repeat and summarize important information.

TECHNIQUES TO BE USED

The programme is basically the same as that used by Siegel and Spivack (1976). Several pre- and post-treatment measures are used because individual ones have been shown to favour different training approaches (Pellegrini and Urbain, 1985). The measures are similar to those used by Siegel and Spivack but a couple of tests that are more applicable to children are replaced by those recommended by Platt and Spivack (1977). The nursing staff are also asked to complete the 'Nurses Observation Scale for Inpatient Evaluation' (NOSIE-30) (Honigfeld, 1981) on each subject. Hersen and Barlow (1976) cite Kazdin (1973) as pointing out the importance of measuring concurrent (untreated) behaviour when assessing target behaviours before and after a programme as there may be unexpected changes in behaviour that the researcher does not observe. Therefore the subjects' behaviour on the ward is assessed to see if there are changes that would not be expected to result from the problem-solving programme as well as those that would.

The study tests the following hypotheses:

General Hypotheses:

One week and two months after the programme,

- 1) The experimental group will be better able to solve interpersonal problems than they were before the programme.
- 2) The experimental group will have improved their problem-solving skills more than the two control groups will have improved theirs.
- 3) The experimental group will be using their problem-solving skills in their environment and so be functioning at a higher level than before the programme.
- 4) The experimental group's functioning on the ward will have improved more than will the functioning of the two control groups.

Specific Hypotheses:

One week and two months after the programme the experimental group will be better able to

- i) Recognise problems
- ii) Produce more alternative solutions to problems
- iii) Be aware of the consequences of their actions
- iv) Choose solutions to interpersonal problems

than they could before the programme and have improved more in these areas than the two control groups.

There will be a correlation between problem-solving skills and level of functioning on the ward. As well as the above, subject characteristics that predict favourable treatment response or otherwise will be examined.

METHOD

SUBJECTS

Subjects were 30 inpatients from 6 different wards at the Royal Derwent Hospital, New Norfolk. All the subjects had been diagnosed as chronic schizophrenic by a psychiatrist and they also met the requirements of the Research Diagnostic Criteria for schizophrenics (Spitzer, Endicott and Robins, 1978, cited in Neale and Oltmann, 1980, p. 46), thereby excluding borderline schizophrenia, paranoid states, schizoaffective disorder, major depressive disorder and manic disorder. Only one subject was not on medication and this was because it had no effect on him.

There were 11 female and 19 male subjects. The age range was 23 to 81 years with a mean age of 51 and a median of 57. Educational level ranged from leaving school at 14 years old to third year at university. The shortest time since first diagnosis was 3 years and the longest was 64 years. Four subjects did not complete the experiment. One improved and discharged himself (experimental group 1), another became too psychotic to continue with the programme (control group 1) and two died towards the end of the programme: one in control group 1 and the other in experimental group 2. As far as can be ascertained none of these reasons for non completion of the experiment were caused by the programme or exercises the subjects took part in.

DESIGN

The subjects were divided into 3 groups of 10 people: an experimental interpersonal problem-solving group, a control for group and structure, and a no treatment group. The experimental and control groups were further split into 2 groups, each with 5 subjects. There were 2 therapists, each taking an experimental and control group. There were no significant intergroup differences in age and time since first diagnosis of the subjects.

Pre-treatment measures were repeated a week after the treatment ended and again at two month follow up.

APPARATUS

Interpersonal Problem-Solving Measures

There were 6 measures of interpersonal cognitive problem-solving. These have been developed and validated by Platt and Spivack (1977).

1) Recognition of Problem Situations Test. A test to measure a person's sensitivity to the existence of interpersonal problems. The subject is asked to list as many of the problems facing the average person in everyday life as s/he can.

2) Optional Thinking Test. A test to measure the capacity to generate solutions to problems. (See Appendix 1).

3) Social Means-Ends Problem-Solving Procedure. A measure of the subject's ability to plan step-by-step means to reach a stated goal in a given situation. (See Appendix 2).

4) Emotional Means-Ends Problem-Solving Procedure. A measure of the subject's ability to cope with his/her own negative emotional states in problem situations. (See Appendix 3).

5) Awareness of Consequences Test. A measure of the subject's ability to consider the consequences of an interpersonal act. (See Appendix 4).

6) Causal Thinking Test. To measure the extent to which the subject spontaneously thinks of cause and effect in social situations. (See Appendix 5).

NOSIE-30

The Nurses Observation Scale for Inpatient Evaluation is a widely used ward behaviour rating scale. (See Appendices 6a & b). Developed by Honigfeld, Gillis and Klett (1966), Honigfeld reviews its history and current status (1974) and compares it with other behaviour rating scales (1981).

Equipment for Interpersonal Problem-Solving Exercises

A Kodak Carousel S slide projector and 33 colour slides were used in Exercises 1, 2, 4, 9 & 10. A Toshiba solid state cassette recorder/player and C 90 Compact Cassette were used in Exercises 6, 11 & 12. Five pictures cut from magazines and individually mounted on white paper covering cardboard were used in Exercise 3 and 3 photos mounted on white paper covering cardboard were used in Exercise 4. In Exercise 7, 24 drawings were used.

PROCEDURE

Patients at the Royal Derwent Hospital, who met the selection criteria, were asked if they would be prepared to participate in a programme which would help them with interpersonal problems. It was made clear that they did not have to take part if they did not wish to. Two of the originally selected patients refused to participate and their places were taken by two others who met the criteria.

All subjects were assessed on their interpersonal problem-solving skills approximately a week before the problem-solving therapy began. Each subject completed the 6 interpersonal problem-solving tests (see Appendices 1 to 5). The majority of subjects were seen individually by a psychologist who read each question to them and recorded the answer but a few subjects, who

could write quickly and well, were seen as a group and wrote their own answers down after the psychologist had read the question. In the Optional Thinking Test (Appx. 1) problem 1 and 2 were used.

In the Social Means-Ends Problem-Solving Procedure (Appx. 2) stories 1, 2 and 4 were used. In the Emotional Means-Ends Problem-Solving Procedure (Appx. 3) stories 1 and 2 were used. In the Awareness of Consequences Test (Appx. 4) stories 1 and 2 were used. In the Causal Thinking Test (Appx. 5) stories 1 and 2 were used. The tests were not presented in a particular order.

Each subject was then matched with 2 other subjects as closely as possible for age, education, time since first diagnosis and interpersonal problem-solving skills. The subjects' scores on the interpersonal problem-solving tests were considered a measure of their skill in this area. Information on the other three variables was obtained from the subjects' files. The age differences within trios ranged between 3 months and 12 years in one case. The average difference was 5 years. There was little variation in educational levels within trios as the majority of subjects had left school between 14 and 16 years of age. Length of time since first diagnosis was more variable in trios of the older subjects, where it was over 20 years. The greatest variation was 20 years but this was deemed acceptable as there was little difference in the subjects' ages and their problem-solving scores were similar. The subjects were grouped together according to their problem-solving scores (9 with the lowest scores mainly zero, 9 with the highest scores and 6 each with low

medium and high medium scores) and randomly allocated to the experimental, control or no treatment group, so that each group had an equal number of subjects with poor, medium and good interpersonal problem-solving skills but ensuring that no two members of a matched trio were in the same group.

NOSIE-30s were completed for each subject by 2 different raters who had close contact with the individual, i.e. nurses.

As previously stated, the experimental and control group were split into two as groups of 5 people were considered more beneficial than groups of 10 (as explained in the Introduction). One of the therapists was a Master of Psychology student working at the hospital and the other was a deputy charge nurse at the hospital; both had previous experience in leading groups. Both therapists were blind to the assessment results. Although both therapists were aware of which was the experimental group, the author observed that they put the same amount of effort and enthusiasm into leading both of their groups. The groups met approximately once a week for 30 - 45 minutes. Each therapist used a medium sized room on a ward of his or her choosing to take the groups. The experimental and control groups met directly before or after each other.

In the first meeting of the experimental group the therapist explained the purpose of the programme and the steps involved in successful interpersonal problem-solving (see Appx 7) and then proceeded to Exercise 1. One or two exercises were completed each session (see Appx. 8 for content of exercises) and the

therapists followed the notes as in Appx. 8. The control group were told that the exercises they would be doing would help them relate to other people, an area in which many psychiatric patients have problems. The therapists selected exercises, from a book by Remocker and Storch (1982), that would last for approximately 45 minutes. A typical exercise would involve group members saying what activities they enjoyed, mirroring each other's movements or one person describing a drawing in such a way that the other members could guess what it was. The no treatment group continued with the usual hospital treatment until the other members of the trio had completed the programme.

Experimental group 1, led by the deputy charge nurse, took 9 sessions to complete the 12 exercises and therefore the control group also met for 9 sessions. Experimental group 2 led by the Master of Psychology student took 6 sessions to complete the 12 exercises and so control group 2 met for 6 sessions. At the end of the programme subjects were asked if the meetings had been beneficial or not.

All subjects were reassessed, a week after finishing the programme, by a psychologist. The same six tests were used but this time in the Optional Thinking Test problems, 3 and 4 were used. In the Social Means-Ends Problem-Solving Procedure, stories 3, 6 and 7 were used. In the Emotional Means-Ends Problem-Solving Procedure, stories 3 and 4 were used. In the Awareness of Consequences Test, problems 3 and 4 were used and in the Causal Thinking Test, situations 3 and 4 were used. Two

NOSIE-30s were completed for each subject by two different raters, who had been in close contact with the subjects in the previous week.

Two months later the same measures were taken. In the Optional Thinking Test, problems 2 and 3 were used. In the Social Means-Ends Problem-Solving Procedure, stories 8, 9 and 10 were used. In the Emotional Means-Ends Problem-Solving Procedure, stories 2 and 4 were used. In the Awareness of Consequences Test, situations 1 and 4 were used and in the Causal Thinking Test, situations 2 and 4 were used. Again the NOSIE-30s were completed by the nursing staff.

RESULTS

This section shows the results of a number of statistical tests applied to the pre- and post-treatment and follow-up measures and the NOSIE-30 data. The results are displayed under the hypotheses to which they pertain. The complete breakdown of individual scores is shown in Appendix 9.

Analysis of covariance was used for the comparison of groups, as despite matching trios in a randomized block design the pre-treatment means of four of the six problem-solving measures were higher for the experimental group than for the other two groups (see Table 1). Use of the analysis of covariance was indicated by the existence of significant correlations between pre- and post-treatment scores and pre-treatment and follow-up scores $p < 0.000$ to $p < 0.05$.

MAIN HYPOTHESES

Hypothesis 1. One week and two months after the programme the experimental group will be better able to solve interpersonal problems than they were before the programme.

Hypothesis 1 was tested by taking the pre- and post-treatment total problem-solving scores for each member of the experimental group and performing a correlated samples t-test to see if there was a significant difference between the two scores.

TABLE 1
MEANS OF PROBLEM-SOLVING TESTS AND NOSIE-30

<u>TESTS</u>	<u>GROUPS</u>	<u>PRE</u>	<u>POST</u>	<u>FOLLOW UP</u>
1	Experimental	2.5	3.0	2.8
	Control	1.3	1.75	2.3
	No Treatment	1.1	1.70	1.2
2	Experimental	1.5	2.1	1.1
	Control	1.1	2.5	2.5
	No Treatment	1.1	1.6	1.3
3	Experimental	3.5	4.8	3.0
	Control	2.0	3.5	3.5
	No Treatment	3.4	2.7	1.7
4	Experimental	1.75	1.6	1.1
	Control	1.5	1.5	1.0
	No Treatment	2.3	2.5	1.3
5	Experimental	0.6	0.8	0.75
	Control	0.4	0.8	0.63
	No Treatment	0.4	0.75	0.65
6	Experimental	0.4	1.87	1.37
	Control	0.4	1.37	1.5
	No Treatment	0.4	1.0	0.7
7	Experimental	117.37	124.5	131.75
	Control	131.5	136.7	143.25
	No Treatment	132.8	139.4	134.90

Tests

- 1 = Recognition of Problems Situations
- 2 = Optional Thinking
- 3 = Social Means-Ends Problem-Solving Procedure
- 4 = Emotional Means-Ends Problem-Solving Procedure
- 5 = Awareness of Consequences
- 6 = Causal Thinking
- 7 = NOSIE-30

There was no significant difference between the experimental group's pre- and post-treatment total problem-solving scores ($t(7) = 1.8$, NS, one-tailed). Therefore the results do not support hypothesis 1.

Hypothesis 2. The experimental group will have improved their problem-solving skills more than the two control groups will have improved theirs one week and two months after the programme.

These hypotheses (differences at post-treatment and follow-up) were tested using a multivariate analysis of covariance with pre-treatment scores on the six problem-solving tests as covariates and group membership as the independent variable. The dependent variables were respectively the six problem-solving tests at post-treatment and follow-up.

The Pillais trace was chosen for significance testing because of its sensitivity and robustness (Norusis, 1985). The following results were obtained:

Dependent Variable	Pillais Trace	Approx. F	Hypothesis d.f.	Error d.f.	Sig. of F
Post- Treatment	.418	0.572	12	26	0.844
Follow -up	.731	1.248	12	26	0.305

Both values of Pillais's Trace are clearly non significant, and hypothesis testing might well stop at this point. However, to further clarify the univariate relationships, supplementary t-tests and univariate analysis of covariance were performed to examine the individual problem-solving tests.

Hypothesis 3. One week and two months after the programme the experimental group will be using their problem-solving skills in their environment and so be functioning at a higher level than before the programme. The NOSIE-30 rated the subject's behaviour on the ward. Correlated sample t-tests were performed on the pre- and post-treatment NOSIE-30 scores for the experimental group and also on their pre-treatment and follow-up NOSIE-30 scores. No significant difference was found between the experimental group's pre- and post-treatment scores ($t(7) = 1.17$, NS, one-tailed). However a significant difference was found at follow-up ($t(7) = 4.2$, $p < .005$, one-tailed). Because of the large number of t-tests used in the analysis (16) there was a chance of type 1 errors occurring (see Hall and Bird, 1985). Hall and Bird suggested using the Bonferroni adjustment to guard against chance significant results occurring at the 5% level when a large number of univariate tests are used. This involves dividing the usual significance level by the number of tests, in this case, $0.05/16$, which produces a significance level of 0.003; the follow-up result is not significant at this level so has to be considered as occurring by chance. The results do not support the hypothesis.

Hypothesis 4. The experimental group's functioning on the ward will have improved more than will the functioning of the two other groups.

The pre- and post-treatment and follow-up NOSIE-30 scores of group members (see group means Table 1) were subjected to an

analysis of covariance with the pre-treatment scores as covariants. No significant difference was found between groups in the post-treatment scores after adjustment ($F = 0.089$, NS) or in the follow-up scores ($F = 0.371$, NS). Therefore hypothesis 4 was not supported by these results.

SPECIFIC HYPOTHESES

The following hypotheses were posited.

1) One week and two months after the programme the experimental group would be better able to recognise problems than they could before the programme. The Recognition of Problem Situations test was considered a measure of the person's ability to recognise problems. One tailed correlated samples t-tests were performed on the experimental group's pre- and post-treatment and follow-up scores on the Recognition of Problem Situations test. The results in both cases were non significant, $t(7) = 0.66$ and 1.8 respectively.

The hypothesis also said that the experimental group would have improved more in this area than the other groups. An analysis of covariance was performed on the pre- and post-treatment and follow-up scores of all the subjects, $F = 0.192$ for the post-treatment scores which was non significant and $F = 0.507$ for the follow-up scores which was also non significant. Therefore the experimental group did not improve significantly on

this test after treatment nor did their scores differ significantly from those of the other groups after adjustment.

ii) One week and two months after the programme the experimental group would produce more alternative solutions to problems than they did before the programme. The Optional Thinking test was considered a measure of the subjects' capacity to produce alternative solutions to problems.

One tailed correlated samples t-tests were performed on the experimental group's scores on the Optional Thinking test and both the post-treatment and follow-up scores were non significant, $t(7) = 1.3$ and 0.48 respectively.

An analysis of covariance was performed on all the subjects' Optional Thinking test scores to ascertain whether the experimental group had improved more than the other groups on this test, as predicted. The post-treatment scores were not significant, $F = 1.613$ and the follow-up scores were also not significant, $F = 0.98$.

So again the experimental group did not improve significantly in this area nor did they perform any better than the other two groups.

iii) One week and two months after the programme the experimental group will be more aware of the consequences of their action than they had been before the programme. The Awareness of Consequences test and the Causal Thinking test were considered

measures of the subjects' awareness of the consequences of their actions.

One tailed correlated samples t-tests were performed on the experimental groups pre- and post-treatment and follow-up scores on the Awareness of Consequences and the Causal Thinking test. Neither the post-treatment or follow-up scores were significant in the Awareness of Consequences test ($t(7) = 0.78$ and 1.02 respectively). On the Causal Thinking test the post-treatment scores were not significant ($t(7) = 1.6$) but the follow-up scores were significant ($t(7) = 2.65$, $p < .025$, one tailed) however this result did not reach the level of significance necessary when using this number of t-tests, so again it was assumed the follow-up scores were a chance result.

An analysis of covariance was performed on all the subjects' scores on the Awareness of Consequences and Causal Thinking tests.

All results were non significant. The results are shown below.

TESTS	PRE/POST-TREATMENT F	PRE/FOLLOW-UP F
Awareness of Consequences	0.717	0.018
Causal Thinking	0.089	1.993

The results do not support the hypothesis that the experimental group would have improved in their awareness of

consequences after the programme or that they would improve more than the other two groups.

iv) One week and two months after the programme the experimental group would be better able to choose solutions to interpersonal problems than they could before the programme. The Social Means-Ends Problem-Solving Procedure (SMEPS) and the Emotional Means-Ends Problem-Solving Procedure (EMEPS) were considered measures of how well a subject could choose an appropriate solution to a problem, as the procedure necessary to do well on these tests was also that used to find a feasible solution.

The results of the one tailed correlated samples t-tests performed on the experimental group's SMEPS scores were non significant, $t(7) = 0.92$ for post-treatment and $t(7) = -0.7$ for follow-up. The results of the t-tests on the experimental group's EMEPS scores were similarly non significant, $t(7) = -0.3$ for the post-treatment scores and $t(7) = -0.6$ for the follow-up.

The hypothesis also suggested that the experimental group would be better able to choose solutions to interpersonal problems than the other two groups. An analysis of covariance was performed on all subjects' pre- and post-treatment and follow-up

scores from the SMEPS and EMEPS. The results are shown below.

TESTS	PRE/POST-TREATMENT		PRE/FOLLOW-UP	
	F	SIG	F	SIG
SMEPS	1.038	NS	1.238	NS
EMEPS	0.296	NS	0.025	NS

As can be seen above all the results of the analysis of covariance were non significant.

It should be mentioned at this point that 12 analyses of covariance were performed on the data, as mentioned before the danger with so many tests is significant results occurring by chance. Hall and Bird say

'The advantage of a multivariate approach over the more conventional repeated measures analysis of variance is that the latter requires assumptions which are almost always violated in behavioural data and whose violation leads to inflated type 1 error rates ...'. (p. 272)

However in this case as none of the analyses were significant, there were no type 1 errors.

It was suggested in the 'Specific Hypotheses' in the Introduction that there would be a correlation between problem-solving skills and level of functioning on the ward. Therefore a Pearson's correlation was performed on all subjects' pre-treatment problem-solving totals and their pre-treatment NOSIE-30s. The

result was not significant ($r = -.2214$). Similarly no correlation was found between the post-treatment problem-solving totals and post-treatment NOSIE-30s ($r = -.0023$) nor the follow-up total problem-solving scores and the follow-up NOSIE-30s scores ($r = .1527$). The results disconfirm this hypothesis.

INDIVIDUAL SCORES

Within all groups some individuals improved their problem-solving scores and/or their NOSIE-30 scores and others deteriorated and yet others remained stable. All but one subject (in the no treatment group) increased their scores on some problem-solving tests but at the same time many had decreased scores on other problem-solving tests.

In the experimental group four subjects improved on an average of two problem-solving tests without deteriorating on any tests. In the control group four subjects improved on an average of three tests without deteriorating on any. Only one subject improved on one test in the no treatment group without deteriorating on any other test and this improvement was not maintained at follow-up. In the control group only one subject maintained his improvement, whereas in the experimental group three subjects maintained their improvement, increasing their average to three tests (one subject returned to pre-treatment level). However the control group still averaged more tests with increased scores at follow-up than the experimental group.

As there was a general improvement in all groups at post-treatment, specific characteristics of improvers could not be ascertained. At follow-up there were three subjects who had maintained their improvement or improved further in the experimental group (there was considered to have been an improvement if the subject had increased his/her score from pre-treatment on more problem-solving tests than s/he had decreased scores on, and had an increased NOSIE-30 score from that at pre-treatment); five that had improved in the control group and two in the no treatment group. They were all aged between 51 and 65 years with two exceptions who were 25 and 27; they had all left school between the ages of 14 and 16 and the length of time since first diagnosis (except for the two younger subjects) was between 20 and 37 years. Five of them came from one particular ward.

Two people in the experimental group had not improved at post-treatment assessment, in that they had as many decreased test scores as increased scores and lower NOSIE-30 scores than before treatment.

Only one subject from the control group had not improved on problem-solving skills but he had an increased NOSIE-30 score. Three subjects from the no treatment group had deteriorated since the previous assessment. The non improvers were either the youngest or the eldest in their groups, their education appeared immaterial and the length of time since diagnosis reflected their ages.

At follow-up one of the experimental group's non improvers had improved and the other had deteriorated; he was the oldest

and one of the most withdrawn in the group. The non improved control subject had deteriorated and two of the most withdrawn members of the control group who had improved at post-treatment assessment had deteriorated at follow-up. The two oldest members of the no treatment group continued to deteriorate at follow-up and were joined by four others.

SUMMARY OF RESULTS

Main Hypotheses

Hypothesis 1 was not supported. The experimental group were not significantly better at solving interpersonal problems after the programme than before it.

Hypothesis 2 was not supported. The experimental group had not improved their problem-solving skills more than the two other groups had improved their problem-solving skills.

Hypothesis 3 was not supported. The experimental group were not using problem-solving skills significantly more on the ward one week after the programme than they had before the programme. At two month follow-up the results were significant but the significance level was not considered high enough to reject the null hypothesis taking into account the number of tests used.

Hypothesis 4 was not supported. The experimental group's

functioning on the ward had not improved significantly more than that of the other two groups after the programme.

Specific Hypotheses

Hypothesis (i) was not supported. The experimental group's recognition of problems did not improve significantly after the programme. Nor were the experimental group significantly better able to recognise problems after the programme than the other two groups.

Hypothesis (ii) was not supported. The experimental group did not produce significantly more alternative solutions to problems after the programme nor significantly more solutions than the other two groups.

Hypothesis (iii) was not supported. The experimental group were not significantly more aware of the consequences of their actions one week after the programme. However at follow-up the Causal Thinking test was significant, again the significance level was not high enough to reject the null hypothesis when a large number of tests were being used. The experimental group were not significantly more aware of the consequences of their actions than the other two groups.

Hypothesis (iv) was not supported. The experimental group were not significantly better able to choose solutions to interpersonal problems than they had been before the programme, nor were they superior in this area to the other two groups.

There was no correlation between problem-solving skills and level of functioning on the ward before or after the programme or at follow-up.

One week after the programme had ended for the experimental group, individual scores showed that the majority of subjects in all groups had improved some of their problem-solving skills but more people in the experimental and control group had not deteriorated on some problem-solving skills. Improvement was maintained at follow-up by more people in the experimental group than in the other two groups.

There were some similarities in age and length of time since first diagnosis amongst the subjects who had improved and in age and length of time since first diagnosis in those subjects who had deteriorated or not improved at the time of post-treatment assessment. At follow-up, age and amount of initial unsociability were characteristics of those who had deteriorated.

DISCUSSION

ANALYSIS OF RESULTS

An analysis of the six problem-solving test and NOSIE-30 scores disconfirmed most of the hypotheses advanced in the introduction. These were, that subjects who had undergone the problem-solving programme would be more skilled at interpersonal problem-solving than subjects in the control and no treatment groups, and that their superior skill would be displayed in a higher level of functioning in their environment, i.e. the ward. The results were significant in two cases, but as some positive results could be expected by chance when using this number of tests, and the scores were not high enough to be significant after the Bonferroni adjustment, the null hypothesis could not be rejected.

One of the purposes of this study was to discover if Siegel and Spivack's (1976) findings, that a problem-solving programme improved the interpersonal problem-solving abilities of chronic psychiatric patients, could be extended to chronic schizophrenic inpatients in a group situation. Chronic schizophrenics were a subgroup of Siegal and Spivack's psychiatric subjects. The results show that one week and two months after the subjects had completed the programme there was no significant improvement in problem-solving skills.

Although the experimental group may not have improved their problem-solving skills significantly they should have improved

them more than the subjects in the other two groups, who had no specific training in problem-solving. However this was not the case. The majority of members of the other two groups had also improved their problem-solving skills as measured by the problem-solving tests, particularly at the post-treatment assessment. In all groups most scores fell at follow-up to pre-treatment levels or lower. So again at this stage there was no significant difference between the groups.

Another purpose of the study was to see if an improvement in interpersonal problem-solving, in the group and at assessment, generalized to the subjects' environment. Although the subjects in the experimental group improved their problem-solving skills, a significant improvement in their functioning, which might be expected was not observed by the nurses on the subjects' wards one week after the programme ended. At the two month follow-up a significant improvement was found ($p < .005$). Although the probability of this being a chance result was low it was not low enough when the full number of statistical tests being used were taken into account. When the experimental group's functioning on the ward at follow-up was compared with that of the other groups there was no significant difference, which does suggest that the significant difference in scores between pre-treatment and follow-up were a chance finding or that some uncontrolled factor caused the overall improvement.

There was also no significant difference between the NOSIE-30 scores one week after the experimental and control groups' meetings finished. These NOSIE-30 scores were more variable over

all groups, some subject's scores having gone down and others having increased since pre-treatment assessment. The lack of correlation between the problem-solving and the NOSIE-30 scores at any stage suggests that good problem-solvers do not necessarily function well or are not seen as functioning well on the ward by the staff; in fact comparing individual results, poor problem-solvers often gained high scores on the NOSIE-30, this could be that they were less outspoken and were seen as easier to manage and therefore more 'normal' or suited to that environment, whereas in a 'normal' environment they would be considered overly passive.

It could also be that people can possess problem-solving skills but not use them in situations where most of their problems are solved for them.

In the Introduction, specific predictions were made about various components of interpersonal problem-solving. Research by D'Zurilla and Nezu (1980) and Nezu and D'Zurilla (1981) has shown that good interpersonal problem-solvers in non-psychiatric populations are particularly good at two different components of problem-solving, the quantity of alternatives they produce and problem definition. They suggest other components of problem-solving should be investigated individually to see if one or several aspects of it are particularly important in bringing about changes in behaviour. Therefore particular parts of the problem-solving process were examined individually. These were recognition of problems, production of alternative solutions, awareness of the consequences of actions and ability to choose

solutions to interpersonal problems. The problem-solving/experimental group would receive training in these areas during the programme; it was predicted that they would improve on them and that even if they did not improve on problem-solving as a whole they might improve on particular sections of the process.

Most of the experimental group improved on all the individual problem-solving tests one week after the programme ended. Those that did not were the most withdrawn members of the group who had low scores when assessed before the intervention. However their lack of improvement was only on the Emotional Means-Ends Problem-Solving Procedure, which was a measure of the subjects' ability to cope with his/her negative emotional states in problem situations, and the Causal Thinking Test, which measured the extent to which the subject thought of cause and effect in social situations. As with the main hypotheses the group's scores did not improve significantly.

As with overall problem-solving the experimental group had not improved significantly more on the individual tests than the other two groups. Most subjects had increased their scores except the most withdrawn members of the no treatment group. In both the experimental and control group the most withdrawn members were more forthcoming in the post-treatment assessment and so what was being measured was not their problem-solving ability but their motivation or sociability. At follow-up they were as withdrawn as before the intervention. The scores of the withdrawn members of the no treatment group hardly changed so it can be assumed that

the group meetings temporarily at least improved the sociability of some of the experimental and control groups members.

At follow-up the individual problem-solving scores of the experimental group had decreased, but although the most withdrawn group members scores had returned to pre-treatment level, the other group members had maintained a small increase over their pre-treatment scores. However this was also the case with the control and no treatment group who had had no problem-solving training although the no treatment group scores overall were near the initial assessment scores. The follow-up Causal Thinking test scores were significant for the experimental group but, as previously stated in the Results, were considered a chance occurrence and they were not significantly different from the other two groups' Causal Thinking scores. Overall it appears that the problem-solving programme did improve the problem-solving test scores, but as most subjects improved over the programme period some other factor was instrumental in bringing about an improvement.

Examination of individual's scores showed that in the experimental group four subjects clearly improved and three maintained (one increased) their improvement at follow-up. Only one person maintained his improvement at follow-up in the control group although four subjects improved at post-treatment assessment. As there was improvement in the control group as well as the experimental group obviously the problem-solving programme was not the main causal factor. As more individuals improved in the two groups that had weekly meetings compared to

the no treatment group, which continued to follow hospital routine and never met as a group, the group meetings were probably a factor in the improvement. The two factors that the group meetings had in common were attention and structure.

In one particular group, Control Group 2, four out of five subjects improved most within their trios. The four came from the same ward and so saw each other outside group sessions. This group was the most cohesive; there was an observable change over the course of the sessions. All members in this group became more involved in the activities set, contributed more and became more articulate. The majority of subjects who met in the groups said they had enjoyed the experience. Three thought the meetings had been 'a waste of time'.

The group meetings seemed to benefit those group members aged 50 to 65 who had left school between 14 and 16 and who had first been diagnosed as schizophrenic at least 20 years ago. The two people in the no treatment group who improved on more problem-solving tests than they deteriorated on were both in the original high scoring block.

It was noticeable that the six most withdrawn members of the experimental and control group improved at post-treatment assessment (this was not necessarily reflected in the NOSIE-30 scores) but only two maintained their improvement at follow-up. The most withdrawn members of the no treatment group did not improve. This suggests that structured group meetings (and probably just attention) can improve the sociability of withdrawn inpatients although it seems their continuance is necessary to

maintain the change. Non improvers tended to be the youngest and oldest in their group (just the oldest in the no treatment group).

It could be that the younger members felt in the minority in the experimental and control groups. There was a trend for the oldest members (over 65) to deteriorate and presumably the type of group meetings provided did not reverse this trend. The no treatment group had six out of ten deteriorators at follow-up, however the experimental group had three out of eight but the control group only had one out of eight. This result may have been different if the experimental group had not lost two of its high scorers and the control group had not lost two of its lowest scorers during the course of the study.

The results show that the type of problem-solving programme used by Siegel and Spivack (1976) does not significantly improve chronic schizophrenics interpersonal problem-solving and does not improve it more than group meetings could. It does appear though as Ludwig (1976) found that group structure and attention can improve withdrawn chronic schizophrenic inpatients' sociability and motivation. The group that improved the most were of a similar age, had been schizophrenic for over 20 years and saw each other outside group sessions. This could mean either the age group that benefits most from this type of group meeting is aged from 50 to 65 or homogeneous groups are the ideal. Certainly older subjects gained little benefit.

Problem-solving skills did not generalize to the ward or were not considered appropriate there, but more likely such skills do not mediate behaviour change. It seems as the no treatment group

problem-solving scores also improved at post-treatment assessment some unidentified factor was responsible for the overall improvement. It seems unlikely to be practice at answering the problem-solving tests or the familiarity of the assessor, as scores decreased at follow-up.

COMPARISONS WITH OTHER RESEARCH

Siegel and Spivack (1976) found an improvement on Optional Thinking in their experimental subjects whilst the no treatment subjects became less adept at this. However their findings were inconclusive because of dropouts from their small number of subjects (12). This study increased the number of subjects to ten per group and added a control group for attention and structure as the problem-solving programme was undertaken in a group situation. As Siegel and Spivack had no control for attention they were unable to say whether their programme or just the attention they were giving the subjects was having an affect on the Optional Thinking scores, or a combination of both. This study has helped to clarify the situation by showing that the actual problem-solving programme is not necessary to improve interpersonal problem-solving. Furthermore attention and structure in group meetings can improve problem-solving in the most withdrawn subjects.

Siegel and Spivack found that their subjects were using their problem-solving skills in their environment when they recounted how they handled problem situations after the programme had

finished. In this study the NOSIE-30 was used to measure subjects' functioning on the ward. In this respect the study is not comparable with that of Siegel and Spivacks. The subjects' functioning on the ward did not correlate with improvement in problem-solving skills. Wallace, Nelson, Liberman, Aitchison, Lukoff, Elder and Ferris (1980) say that simple behaviours such as eye contact generalize quite well to novel situations whereas more complex behaviours, such as making an appropriate request do not. As problem-solving can be considered complex behaviour it would not be expected to generalize. This lack of generalization may be explained by the following:

Langer (1978) has argued that, for the most part, social behaviour is "unthinking" in nature and proceeds according to overlearned "social scripts". Social situations that call for more reflective cognitive processing (e.g. situations that are novel or where any action might have important consequences) may be relatively uncommon (Krasnor and Rubin, 1981) (Pellegrini and Urbain, 1985, p. 37).

The answer to the above seems to be guided practice in interpersonal problem-solving in the subject's environment to provide him/her with a new 'script' which cues him/her to think of problem-solving as a possibility in the situation. It may also be necessary to provide reinforcement initially to overcome apathy, lack of motivation and the rewards for compliance that may be present.

Pellegrini and Urbain (1985) say that there is evidence to suggest that problem-solving behaviour can be affected by a person's competence in social behaviours, such as assertiveness

and role taking and therefore many interpersonal cognitive problem-solving programmes now incorporate training in these areas.

IMPROVEMENTS

Initially subjects were chosen by psychiatrist's diagnosis and the Research Diagnostic Criteria for schizophrenics. Recent research has indicated that people diagnosed as schizophrenic can be usefully categorised as having a negative or positive syndrome or both (Crow, 1985). Some of the symptoms associated with both syndromes are mentioned in the Introduction. Bellack et al (1984) noted that there were a subsample of schizophrenic patients who do not show a positive response to social skills training. Jackson and Minas (1985) suggest these subjects have the characteristics Crow describes as the negative syndrome. The same situation may apply in problem-solving training as Siegel and Spivack say that the programme will not be of benefit to brain damaged patients. Although none of the subjects were reported as having brain damage it is quite possible that some did. It would be difficult to separate the effects of institutionalization from brain damage in many cases and wholesale CAT scans would not have been possible. Crow (1985) says a difference has been found in the EEGs of negative and positive syndrome schizophrenics and this may be a way of screening out unsuitable subjects in future research if it is found that negative syndrome patients, in particular, do not profit from problem-solving training.

The individual scores indicate that the members of the most homogeneous group improved most in their trios. Also more dissatisfaction was expressed by younger subjects and/or subjects functioning at higher levels than the other subjects in their group, who became bored with the slow pace required if all group members were to understand the proceedings. Therefore more homogeneous groups would have allowed subjects to learn at their optimal speed. Also a smaller age range might have controlled the possible confounding effects of age on interpersonal problem-solving. O'Brien (1975) found that one or two activated patients in a group of withdrawn patients does not work well. He suggests that there should be a couple of withdrawn patients in a group of activated patients. This was the case in Experimental group 1 where initially there were three active subjects, one very withdrawn and one relatively withdrawn subject. This did work well with both the withdrawn subjects improving and the relatively withdrawn one improving at follow-up. However Control group 2, which was made up of withdrawn patients also worked well.

Chronic schizophrenics have particular problems in that they lack concentration, their perception and retention are poor and they are apathetic. This became obvious as the programme advanced. The subjects may have benefited from a longer programme which repeated each step several times, again the subjects may have been better in groups that took account of their specific deficits, some subjects were held up by the slowness of others in their group and others could not keep up. This really indicates that perhaps training individual schizophrenics in problem-solving skills may be better than teaching them in a

group. Group meetings could be used to encourage withdrawn patients to be more sociable.

Gains made in problem-solving skills decreased at follow-up. This could be because the programme was too short to establish the skills in even the high functioning subjects' repertoires. Also the factors present in the training situation were not necessarily present in the natural environment i.e. the ward. In the groups, subjects received attention and verbal reinforcement for participating and relevant answers. On the ward any verbalisation, however irrelevant, may be praised if it is from a withdrawn patient, or ignored, however relevant, if as was the case in this particular hospital, there is under staffing.

CONCLUSIONS

The problem-solving programme used in this study cannot be recommended as an intervention with groups of chronic schizophrenic inpatients. So little time and money is spent on psychosocial programmes for chronic schizophrenics that the money available should be spent as effectively as possible. This is not to dismiss problem-solving as useless, it may well be better suited to other chronic psychiatric patients who do not have the cognitive problems of schizophrenics, who themselves may benefit from being taught problem-solving individually.

Problem-solving may well be useful when incorporated in a package with self instruction and social skills. Both of these have achieved some success with schizophrenics (Meichenbaum, 1977

and Hersen and Bellack, 1976) and problem-solving would seem a natural progression from them. Self instruction could also be used to cue schizophrenics to use their problem-solving skills.

Ideally patients should be thoroughly assessed and programmes created that are individually suited to them. However patients in large institutions will probably have difficulties maintaining progress made unless the typical ward environment is changed so that inpatients can expect attention and reinforcement when using their new skills. For withdrawn schizophrenics a more structured day is needed to prevent the slide into complete apathy.

REFERENCES

- American Psychiatric Association. (1980) DSM-III Diagnostic and Statistical Manual of Mental Disorders.
- Andreasen, N.C., Olsen, S.A., Dennert, J.W., & Smith, M.R. (1982) Ventricular enlargement in chronic schizophrenia: Relationship to positive and negative symptoms. American Journal of Psychiatry, 139, pp. 297-302.
- Andrews, G. (1984) Treatment outlines for the management of schizophrenia: The Quality Assurance Project. Australian and New Zealand Journal of Psychiatry, (March), Vol 18(1), pp. 19-38.
- Arieti, S. (1979) Understanding and Helping the Schizophrenic: A Guide for Family and Friends. Simon & Schuster : NY
- Asarnow, R.F., Steffy, R.A., Maccrimmon, D.J., & Cleghorn, J.M. (1978) An attentional assessment of foster children at risk for schizophrenia. In L. Wynne, R. Cromwell, & S. Matthysse (Eds) The Nature of Schizophrenia. Wiley : NY
- Asarnow, R.F., Steffy, R.A., & Waldman I. (1985) Comments on Harvey, Weintraub, & Neale : Span of Apprehension deficits in children vulnerable to psychopathology. Journal of Abnormal Psychology, Vol 94, No 3, pp. 414-417.
- Ayllon, T., & Azrin, N.H. (1965) The measurement and reinforcement of behavior of psychotics. Journal of the Experimental Analysis of Behavior, 8, pp. 357-383.

- Aylward, E., Walker, E., & Bettles, B. (1984) Intelligence in Schizophrenia : Meta-analysis of the research. Schizophrenia Bulletin, Vol 10(3), pp. 430-459.
- Bannister, D., & Mair, J.M.M. (1968) The Evaluation of Personal Constructs. Academic Press.
- Bannister, D., & Salmon, P. (1966) Schizophrenic thought disorder : Specific or diffuse. British Journal of Medical Psychology, 39, pp. 215-219.
- Bellack, A.S., Turner, S.M, Hersen, M., & Luber, R.F. (1984) An examination of the efficacy of social skills training for chronic schizophrenic patients. Hospital & Community Psychiatry, 35(10), pp. 1023-1028.
- Brown, G.W., Birley, J.L.T., & Wing, J.K. (1972) Influence of family life on the course of schizophrenic disorders : A replication. British Journal of Psychiatry, 121, pp. 241-258.
- Brown, R. (1973) Schizophrenia, language and reality. American Psychologist, 28, pp. 395-403.
- Cohen, B.D., & Camhi, J. (1967) Schizophrenic performance in a ward communication task. Journal of Abnormal Psychology, 72, pp. 240-246.
- Crow, T.J. (1985) The two-syndrome concept : Origins and current status. Schizophrenia Bulletin, Vol 11, No 3, pp. 471-486.
- Crow, T.J., Cross, A.J., Johnstone, E.C., & Owen, F. (1982) Two syndromes in schizophrenia and their pathogenesis. In F.A.

- Henn & H.A. Nasrallah (Eds) Schizophrenia as a Brain Disease.
(pp. 196-234). Oxford Univ. Press : NY.
- Doane, J.A., Falloon, I.R.H., Goldstein, M.J., & Mintz, J. (1985)
Parental affective style and the treatment of schizophrenia.
Archives of General Psychiatry, Vol 47, Jan, pp. 34-42.
- D'Zurilla, T.J., & Nezu, A. (1980) A study of the generation of
alternative process in social problem-solving. Cognitive
Therapy Research, 4, pp. 67-72.
- Falloon, I.R.H., Boyd, J.L., McGill, C.W., Williamson, M., Razani,
J., Moss, H.B., Gilderman, A.M., & Simpson, G.M. (1985)
Family management in the prevention of morbidity of
schizophrenia. Archives of General Psychiatry, Vol 42,
Sept, pp. 887-896.
- General Register Office (1968) The British Glossary of Mental
Disorders. London.
- Goldberg, S. (1985) Negative and deficit symptoms in
schizophrenia do respond to neuroleptics. Schizophrenia
Bulletin, Vol 11, No 3, pp. 453-456.
- Gotlib, I.H., & Asarnow, R.F. (1979) Interpersonal and
impersonal problem-solving skills in mildly and clinically
depressed university students. Journal of Consulting and
Clinical Psychology, 47, pp. 86-95.
- Gottesman, I.I., & Shields, J. (1972) Schizophrenia and
Genetics: A Twin study vantage point. Academic Press : NY.
- Hall, W., & Bird, K. (1985) The problem of multiple inference
in psychiatric research. Australian and New Zealand Journal
of Psychiatry, 19, pp. 265-274.
- Harvey, P., Winters, K., Weintraub, S., & Neale, J.M. (1981)
Distractability in children vulnerable to psychopathology.

- Journal of Abnormal Psychology, Vol 90, No 4, pp. 298-304.
- Heinrichs, D.W., Hanlon, T.E., & Carpenter, W.T. (1984) The quality of life scale : An instrument for rating the schizophrenic deficit syndrome. Schizophrenia Bulletin, 10, pp. 388-398.
- Hersen, M., & Bellack, A.S. (1976) A multiple-baseline analysis of social skills training in chronic schizophrenics. Journal of Applied Behaviour Analysis, 9, pp. 239-245.
- Hersen, M., & Barlow, (1976) Single Case Experimental Designs. Pergamon : NY.
- Heston, L.L. (1966) Psychiatric disorders in foster home reared children of schizophrenic mothers. British Journal of Psychiatry, 112, pp. 819-825.
- Hollister, L.E. (1984) Drug treatment of schizophrenia. Psychiatric Clinics of North America, (Sep), Vol 7(3), pp. 435-52.
- Honigfeld, G. (1974) NOSIE-30 : History and current status of its use in pharmacopsychiatric research. In P. Pichot (Ed), Psychological Measurements in Psychopharmacology, Vol 7, pp. 238-263. Krajer : Basel.
- Honigfeld, G. (1981) The evaluation of ward behaviour rating scales for psychogeriatric use. Psychopharmacology Bulletin, Vol 17, No 4, Oct, pp. 82-95.
- Honigfeld, G., Gillis, R.D., & Klett, C.J. (1966) NOSIE-30 : A treatment-sensitive ward behaviour scale. Psychological Reports, 19, pp. 180-182.

- Jackson, H.J., & Minas, I.H. (1985) Subtypes of schizophrenia and their implications for social skills training. Paper presented at the 8th National Conference of the Australian Behavioural Modification Assc. Melbourne Univ.
- Kazdin, A.E. (1976) The modification of 'schizophrenic' behaviour. In P. Magaro (Ed) The Construction of Madness : Emerging Conceptions and Interventions. Pergamon : NY.
- Kendell, R.E. (1975) The Role of Diagnosis in Psychiatry. Blackwell : London.
- Kraepelin, E. (1971) Dementia Praecox and Paraphrenia. Krieger Publishing Co. : Huntington, NY.
- Krasner, L.R., & Rubin, K.H. (1981) The assessment of social problem-solving skills in young children. In T. Merluzzi, C. Glass & M. Genest (Eds) Cognitive Assessment. Guildford Press : NY.
- Langer, E. (1978) Rethinking the role of thought in social interactions. In J. Harvey, W. Ickes & R. J. Kidd (Eds) New Directions in Attribution Research, Vol. 2. L. J. Erlbaum Associates : Hillsdale, New Jersey.
- Leff, J.P., & Wing, J.K. (1971) Trial of maintenance therapy in schizophrenia. British Medical Journal, 3, pp. 559-604.
- Lehmann, H.E. (1975) Psychopharmacological treatment of schizophrenia. Schizophrenia Bulletin, 1(13), pp. 27-45.
- Lewontin, S.R., Rose, S., & Kamin, L. (1984) Not in our Genes. Pantheon : NY.

- Lieberman, R.P. (1972) Behavioural modification of schizophrenia : A review. Schizophrenia Bulletin, 1(6), pp. 37-48.
- Ludwig, A.M. (1976) Group treatment methods for chronic schizophrenics. In L.J. West & P.E. Flinn (Eds), The Treatment of Schizophrenia : Progress and Prospects. Grune & Stratton.
- Mannuzza, S., Kietzman, M.L., Berenhaus, I.J., Ramsey, P.H., Zubin, J., & Sutton, S. (1984) The modality shift effect in schizophrenia: Fact or artifact ? Biological Psychiatry, Vol 19(9), pp. 1317-1331.
- Maxmen, J.S. (1984) Helping patients survive theories : The practice of an educative model. International Journal of Group Psychotherapy, Vol 34(3), pp. 355-368.
- Mednick, S.A., & Schulsinger, F. (1968) Some premorbid characteristics related to the breakdown of children with schizophrenic mothers. In D. Rosenthal & S.S. Kety (Eds), The Transmission of Schizophrenia. Pergamon : NY.
- Meehl, P.E. (1972) Specific genetic etiology, psychodynamics & therapeutic nihilism. International Journal of Mental Health, 1, pp. 16-27.
- Meichenbaum, D. (1977) Cognitive Behavior Modification; An Integrative Approach. Plenum Press : NY.
- Moline, R.A., Singh, S., Morris, A., & Meltzer, H.Y. (1985) Family expressed emotion and relapse in schizophrenia in 24 urban American patients. The American Journal of Psychiatry, Vol 142, No 9, Sept, pp. 1078-1084.

- Mosher, L. R. & Keith, S. J. (1980) Psychosocial treatment:
Individual, group, family & community support approaches.
Schizophrenia Bulletin, Vol 6(1), pp. 10-41.
- Neale, J.M. (1971) Perceptual span in schizophrenia. Journal
of Abnormal Psychology, 77, pp. 196-204.
- Neale, J.M., & Oltmanns, T.F. (1980) Schizophrenia. J. Wiley
& Sons : NY.
- Nezu, A., & D'Zurilla, T.J. (1981) Effects of problem
definition and formulation on decision making in the social
problem-solving process. Behavior Therapy, 12, pp. 100-106.
- Norusis, M.J. (1985) SPSSX Advanced Statistics Guide. McGraw
Hill : NY.
- O'Brien, C.P. (1975) Group therapy for schizophrenia : A
practical approach. Schizophrenia Bulletin, 13, Summer,
pp. 119-130.
- Oltmanns, T.F. (1978) Selective attention in schizophrenic and
manic psychosis : The effect of distraction on information-
processing. Journal of Abnormal Psychology, 87, pp. 212-
225.
- Oltmanns, T.F., Weintraub, S., Stone, A.A., & Neale, J.M. (1978)
Cognitive slippage in children vulnerable to schizophrenia.
Journal of Abnormal Child Psychology, 6, pp. 237-240.

- Parloff, M. B. & Dies, R. R. (1977) Group psychotherapy outcome research 1966-75. International Journal of Group Psychotherapy, 27, pp. 281-319.
- Paul, G.L., & Lentz, R.J. (1977) Psychosocial Treatment of Chronic Mental Patients : Milieu versus Social Learning Programs. Harvard Univ. Press : Cambridge.
- Platt, J.J., Scura, W.C., & Hannon, J.R. (1973) Problem-solving thinking of youthful incarcerated heroin addicts. Journal of Community Psychology, 1, pp. 278-281.
- Platt, J.J., & Spivack, G. (1977) Measures of Interpersonal Problem-Solving for Adults and Adolescents. Hahnemann Univ. : Philadelphia.
- Pellegrini, D.S., & Urbain, E.S. (1985) An evaluation of interpersonal cognitive problem-solving training with children. Journal of Child Psychology & Psychiatry, Vol 26, No 1, pp. 17-41
- Remocker, A.J., & Storch, E.T. (1982) Actions Speak Louder : A Handbook of Nonverbal Group Techniques. (3rd Ed.). Churchill Livingstone.
- Rochester, S.R., Martin, J.R., & Thurston, S. (1977) Thought-process disorder in schizophrenia : The listener's task. Brain & Language, 4, pp. 95-114.
- Rolf, J.E. (1972) The social and academic competence of children vulnerable to schizophrenia and other behaviour disorders. Journal of Abnormal Psychology, 80, pp. 225-243.

- Scheff, T.J. (1966) Being Mentally Ill : A Sociological Theory. Aldine : Chicago.
- Shopsin, B., Klein, H., Aaronson, M., & Collora, M. (1979) Clozapine, chlorpromazine and placebo in newly hospitalised acutely schizophrenic patients. Archives of General Psychiatry, 36, pp. 657-664.
- Siegel, J.M., & Spivack, G. (1976) Problem-solving therapy : The description of a new program for chronic psychiatric patients. Psychotherapy : Theory and Practice, 13, #4, Winter, pp. 368-373.
- Smith, E.E. (1970) Associative and editing processes in schizophrenic communication. Journal of Abnormal Psychology, 75, pp. 182-186.
- Smith, J., & Oatley, K. (1985) Schizophrenia : A dual inheritance. New Scientist, September, pp. 52-54.
- Spitzer, R.L., Sheehy, M., & Endicott, J. (1977) DSM-III : Guiding Principles. In V.M. Rokoff, H.C. Stance & B. Kedwards (Eds), Psychiatric Diagnosis. Bruner/Mazel : NY.
- Spivack, G., Platt, J.J., & Shure, M.B. (1976) The Problem-Solving Approach to Adjustment. Jossey-Bass : NY.
- Sylph, J.A., Ross, H.E., & Kedward, H.B. (1977) Social disability in chronic psychiatric patients. American Journal of Psychiatry, 134 : 12, Dec, pp. 1391-1394.
- Toenniessen, L.M., Casey, D.E., & McFarland, B.H. (1985) Tardive dyskinesia in the aged. Archives of General Psychiatry, Vol 42, No 3, March, pp. 278-284.
- Vaughn, C.E., & Leff, J.P. (1976) The influence of family and

- social factors on the course of psychiatric illness : A comparison of schizophrenic and depressed neurotic patients. British Journal of Psychiatry, 129, pp. 125-137.
- Walker, Hedberg, Clement, & Wright. (1981) Clinical Procedures for Behavior Therapy. Prentice-Hall : New Jersey.
- Wallace, C.J., Nelson, C.J., Liberman, R.P., Aitchison, R.A., Lukoff, D., Elder, J.D., & Ferris, C. (1980) A review and critique of social skills training with schizophrenic patients. Schizophrenia Bulletin, 6, pp. 42-63.
- Watt, N.F. (1978) Patterns of childhood social development in adult schizophrenia. Archives of General Psychiatry, 35, pp. 160-170.
- Wegner, J.T., Catalano, F., Gibraltar, J., & Kane, J.M. (1985) Schizophrenics with tardive dyskinesia. Archives of General Psychiatry, Vol 42, Sept, pp. 800-865.
- Weintraub, S., Prinz, R., & Neale, J.M. (1978) Peer evaluations of the competence of children vulnerable to psychopathology. Journal of Abnormal Child Psychology, 6, pp. 461-473.
- Wender, P.H., Rosenthal, D., Kety, S.S., Schulsinger, F., & Welner, J. (1974) Crossfostering : A research strategy for clarifying the role of genetic and experiential factors in the etiology of schizophrenia. Archives of General Psychiatry, 30, pp. 121-128.
- Wing, J.K., & Brown, G.W. (1970) Institutionalism and Schizophrenia. Cambridge Univ. Press : London.

APPENDIX 1

The Optional Thinking Test (Alternative Thinking)

The capacity to generate solutions to problems is another component of interpersonal problem-solving cognition. In order to measure this ability to conceive of alternatives, the optional thinking (OT) test is used. This task requires the subject to conceptualize options to hypothetical but typical real-life problems.

References: Platt & Spivack, 1973; Platt, Spivack, Altman, Altman, & Peizer, 1975; Spivack, Platt, & Shure, 1976.

Instruments

Alternatives (Male Form)

Instructions

"Now I am going to tell you some things that happen to a person, and I want you to think of all the things he (she) could do about it. Tell me everything that comes into your head. And don't worry about being right or wrong because there are no right or wrong answers, O.K.?"

1. John wants to watch his favorite TV program but his friend is watching another program. What can John do so he can have a turn watching TV? ----- What else do you think he might do? (In all situations, when S is finished but has only given 1 or 2 answers, E says, "Can you think of anything else?")
2. Victor wants people to listen to him but no one ever does. What can Victor do to get listened to? ----- What else can he do? ----- What else?
3. Jack wants his friend to go to the movies with him this evening, but his friend doesn't want to go. What can Jack do to get his friend to go with him to the movies this weekend? ----- What else can he do? ----- What else?
4. Steve broke his wife's favorite flower pot and he's afraid his wife will be mad at him. What can Steve do so his wife won't be mad? ----- What else can he do? ----- What else?

Administration

In the optional thinking test the subject is asked to relate all the things he can think of for a person to do in the given problem situation. A standardized set of probing questions such as, "What else can he do?" are employed to elicit differing solutions to each problem. In all situations, when the subject has finished but has given only one or two answers, the examiner asks, "Can you think of anything else?" until no new ideas are forthcoming.

APPENDIX 2

The Social Means-Ends Problem-Solving Procedure

Means-ends thinking is an aspect of problem-solving thinking defined as the ability to plan step-by-step means to reach a stated goal in a given situation. This ability is measured by the means-ends problem-solving (MEPS) procedure. The tasks require the subject to conceptualize appropriate effective means of reaching a specified goal in order to satisfy an aroused need in hypothetical interpersonal problem situations.

References: Platt & Spivack, 1970; 1972a; 1972b; 1972c; 1973a; 1973b; 1974, 1975; Platt, Spivack, Altman, Altman, & Peizer, 1975; Platt, Scura, & Hannon, 1973; Platt & Siegel, 1976; Platt, Siegel, & Spivack, 1975; Spivack, Platt, & Shure, 1976.

Instrument

Means-Ends Stories (Male Form)

Instructions

In this procedure we are interested in your imagination. You are to make up some stories. For each story you will be given the beginning of the story and how the story ends. Your job is to make up a story that connects the beginning that is given to you with the ending given you. In other words, you will make up the middle of the story.

Write at least one paragraph for each story.

1. Mr. A. was listening to the people speak at a meeting about how to make things better in his neighborhood. He wanted to say something important and have a chance to be a leader too. The story ends with him being elected leader and presenting a speech. You begin the story at the meeting where he wanted to have a chance to be a leader.
2. H. loved his girlfriend very much, but they had many arguments. One day she left him. H. wanted things to be better. The story ends

with everything fine between him and his girlfriend. You begin the story with his girlfriend leaving him after an argument.

3. Mr. P. came home after shopping and found that he had lost his watch. He was very upset about it. The story ends with Mr. P. finding his watch and feeling good about it. You begin the story where Mr. P. found that he had lost his watch.
4. Mr. C. had just moved in that day and didn't know anyone. Mr. C. wanted to have friends in the neighborhood. The story ends with Mr. C. having many good friends and feeling at home in the neighborhood. You begin the story with Mr. C. in his room immediately after arriving in the neighborhood.
5. During the Nazi occupation a man's wife and children were viciously tortured and killed by an SS trooper, and the man swore revenge. The story begins one day after the war, when the man enters a restaurant and sees the ex-SS trooper. The story ends with the man killing the SS trooper. You begin when he sees the SS trooper.
6. One day Al saw a beautiful girl he had never seen before while eating in a restaurant. He was immediately attracted to her. The story ends when they get married. You begin when Al first notices the girl in the restaurant.
7. Bob needed money badly. The story begins one day when he notices a valuable diamond in a shop window. Bob decides to steal it. The story ends when he succeeds in stealing the diamond. You begin when he sees the diamond.
8. John noticed that his friends seemed to be avoiding him. John wanted to have friends and be liked. The story ends when John's friends like him again. You begin where he first notices his friends avoiding him.
9. One day George was standing around with some other people when one of them said something very nasty to George. George got very mad. George got so mad he decided to get even with the other person. The story ends with George happy because he got even. You begin the story when George decided to get even.
10. Joe is having trouble getting along with the foreman on his job. Joe is very unhappy about this. The story ends with Joe's foreman liking him. You begin the story where Joe isn't getting along with his foreman.

APPENDIX 3

The Emotional Means-Ends Problem-Solving Procedure

Another related parameter of problem-solving thinking which has been studied involves the ability to cope with one's own negative emotional states (e.g. depression, anxiety) in interpersonal situations. The procedure used to measure this variable represents a modification, with respect to content, of the procedure used to measure social means-ends thinking. Thus, the task focuses on problem situations relating to the ability to cope with one's own negative emotional states.

References: Siegel, Platt, & Peizer, 1976; Platt, Spivack, Altman, Altman, & Peizer, 1975; Spivack, Platt, & Shure, 1976; Platt & Spivack, 1973.

Instrument

Emotional Means-Ends Stories (Female Form)

Instructions

The examiner gives only the first two stories, i.e., #1 and #2, unless the subject has trouble with one of these stories and an additional one is needed.

1. Mrs. A. woke up one morning feeling extremely nervous and uncomfortable. She felt that something terrible would happen that day. The story ends with Mrs. A. feeling much better in every way, much less nervous and uncomfortable. In fact she felt quite relaxed. You begin the story where she felt that something terrible would happen..
2. C. had been feeling "blue" and "down" for days. She couldn't seem to shake the depression that had her in its grip. The story ends with C. feeling much happier. You begin the story where she felt "blue" and "down."
3. R's boss had called her and told her that she wasn't doing a good job. R. felt at that moment that she wasn't worth much. The story ends with R. feeling much better about herself, more convinced that she was worth something. You begin the story where R. felt that she wasn't worth much.
4. V. was awake at 2:00 A.M. She had not had a good night's sleep in several nights. Try as she might she couldn't shut her racing mind off so that she could relax and get to sleep. The story ends with V. getting a good night's sleep. You begin the story where she was awake at 2:00 A.M.

The Awareness of Consequences Test (Temptation Stories)

A logical component of a person's total problem-solving capacity should include an ability to consider how his actions may affect himself and other people and how others may react. The process of consequential thinking includes consideration of the pros and cons to an interpersonal act that goes beyond simple naming of alternative events that may ensue. Consideration of consequences (CC) is measured using a story telling procedure in which the protagonist is exposed to transgression. The subject is asked to weigh both the pros and cons to each conflicting choice.

References: Platt & Spivack, 1973; Platt, Spivack, Altman, & Peizer, 1975; Spivack, Platt, & Shure, 1976.

InstrumentTemptation Stories (Male Form)

1. Joe has been on a diet for several weeks now. He is at a party and they are serving a lot of his favorite food. He is tempted to go off his diet.

TELL EVERYTHING THAT GOES ON IN JOE'S MIND, AND THEN TELL WHAT HAPPENS.

2. John finds a watch on the floor of a hallway at work. When he picks it up, he looks around and notices that there is no one else in the hallway. It is a nice watch and he could really use one. He is tempted to keep it.

TELL EVERYTHING THAT GOES ON IN JOHN'S MIND, AND THEN TELL WHAT HAPPENS.

3. Bill loves to go hunting but his doctor told him he can't go. One weekend, his next door neighbor is planning to go. Bill looks out the window at his neighbor getting into his car and is tempted to go out hunting with him.

TELL EVERYTHING THAT GOES ON IN BILL'S MIND, AND THEN TELL WHAT HAPPENS.

4. Jack cashes his check at the bank and when he counts his money, he finds that he was given too much. He looks at the teller and sees that she has not noticed anything. He could sure use the extra money.

TELL EVERYTHING THAT GOES ON IN JACK'S MIND, AND THEN TELL WHAT HAPPENS.

APPENDIX 5

The Causal Thinking Test

Causal thinking has been conceptualized as involving the awareness of and tendency to respond in terms of the relationship between present events and prior to possible causal elements of these events. The extent to which an individual spontaneously thinks of cause-and-effect in social situations is measured by the causal thinking (CT) test based on a method adapted from Biber and Lewis (1949).

References: Platt & Spivack, 1973; Platt, Spivack, Altman, Altman, & Peizer, 1975; Spivack, Platt, & Shure, 1976.

Instrument

Causality (Male Form)

1. Jim felt very mad and he's walking home with his friend. What is he saying to his friend? You can make it up. (In all situations, when S finishes responding, E probes once saying, "Is there anything else?")
2. Tom got to work late today, after everyone else was already there. He's talking to his boss. What do you think he's saying to him?
3. Larry has not received a big, expected raise. He is talking to his wife on the phone. What do you think he is saying to her?
4. Bill is upset. He is talking to his wife. What do you think he's saying to her?

Administration

The examiner describes the interpersonal situations to the subject. The subject is then asked what might the protagonist be saying to the other character in the story. Then, the examiner using another probing question attempts to elicit further story directed responses from the subject. The subject's response is transcribed verbatim by the experimenter directly in the test booklet. It is helpful, when recording responses to all problem-solving measures, if condensation is avoided as the recorder may not actually score the subject's responses himself.

NURSES' OBSERVATION SCALE FOR INPATIENT EVALUATION (NOSIE-30)

SUBJECT'S NAME _____ DATE _____

REPORTER'S NAME	TITLE

DIRECTIONS

PLEASE RATE THIS PATIENT'S BEHAVIOR AS YOU OBSERVED IT DURING THE LAST THREE DAYS ONLY.
INDICATE YOUR CHOICE BY FILLING IN ONE BLOCK FOR EACH ITEM, USING THIS KEY:

0 = NEVER 1 = SOMETIMES 2 = OFTEN 3 = USUALLY 4 = ALWAYS

USE NO. 2 PENCIL. MAKE YOUR MARKS HEAVY AND BLACK. ERASE MISTAKES COMPLETELY.

- | | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | (1) IS SLOPPY. |
| 1 | 2 | 3 | 4 | (2) IS IMPATIENT. |
| 1 | 2 | 3 | 4 | (3) CRIES. |
| 1 | 2 | 3 | 4 | (4) SHOWS INTEREST IN ACTIVITIES AROUND HIM. |
| 1 | 2 | 3 | 4 | (5) SITS, UNLESS DIRECTED INTO ACTIVITY. |
| 1 | 2 | 3 | 4 | (6) GETS ANGRY OR ANNOYED EASILY. |
| 1 | 2 | 3 | 4 | (7) HEARS THINGS THAT ARE NOT THERE. |
| 1 | 2 | 3 | 4 | (8) KEEPS HIS CLOTHES NEAT. |
| 1 | 2 | 3 | 4 | (9) TRIES TO BE FRIENDLY WITH OTHERS. |
| 1 | 2 | 3 | 4 | (10) BECOMES UPSET EASILY IF SOMETHING DOESN'T SUIT HIM. |
| 1 | 2 | 3 | 4 | (11) REFUSES TO DO THE ORDINARY THINGS EXPECTED OF HIM. |
| 1 | 2 | 3 | 4 | (12) IS IRRITABLE OR GROUCHY. |
| 1 | 2 | 3 | 4 | (13) HAS TROUBLE REMEMBERING. |
| 1 | 2 | 3 | 4 | (14) REFUSES TO SPEAK. |
| 1 | 2 | 3 | 4 | (15) LAUGHS OR SMILES AT FUNNY COMMENTS OR EVENTS. |
| 1 | 2 | 3 | 4 | (16) IS MESSY IN HIS EATING HABITS. |
| 1 | 2 | 3 | 4 | (17) STARTS A CONVERSATION WITH OTHERS. |
| 1 | 2 | 3 | 4 | (18) SAYS HE FEELS BLUE OR DEPRESSED. |
| 1 | 2 | 3 | 4 | (19) TALKS ABOUT HIS INTERESTS. |
| 1 | 2 | 3 | 4 | (20) SEES THINGS THAT ARE NOT THERE. |
| 1 | 2 | 3 | 4 | (21) HAS TO BE REMINDED WHAT TO DO. |
| 1 | 2 | 3 | 4 | (22) SLEEPS, UNLESS DIRECTED INTO ACTIVITY. |
| 1 | 2 | 3 | 4 | (23) SAYS THAT HE IS NO GOOD. |
| 1 | 2 | 3 | 4 | (24) HAS TO BE TOLD TO FOLLOW HOSPITAL ROUTINE. |
| 1 | 2 | 3 | 4 | (25) HAS DIFFICULTY COMPLETING SIMPLE TASKS ON HIS OWN. |
| 1 | 2 | 3 | 4 | (26) TALKS, MUTTERS, OR MUMBLES TO HIMSELF. |
| 1 | 2 | 3 | 4 | (27) IS SLOW-MOVING OR SLUGGISH. |
| 1 | 2 | 3 | 4 | (28) GIGGLES OR SMILES TO HIMSELF FOR NO APPARENT REASON. |
| 1 | 2 | 3 | 4 | (29) IS QUICK TO FLY OFF THE HANDLE. |
| 1 | 2 | 3 | 4 | (30) KEEPS HIMSELF CLEAN. |

	1	2	3	4	5	6	7	8	9		PROJECT NUMBER
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APPENDIX 6B

NOSIE-30 HAND SCORING KEY

SUBJECT _____ CODE # _____ DATE OF RATING _____

NAME OF RATER 1 _____ POSITION OF RATER 1 _____

NAME OF RATER 2 _____ POSITION OF RATER 2 _____

NOSIE FACTOR SCORES ARE BASED ON THE SUM OF TWO RATERS' ITEM RESPONSES.
THEREFORE, IF ONE RATER IS USED, HIS SCORES MUST BE DOUBLED.

POSITIVE FACTORS

<p>1. SOCIAL COMPETENCE (COM)</p> <table border="0"> <tr> <th>RATER 1</th> <th>RATER 2</th> </tr> <tr><td>11*</td><td>_____</td></tr> <tr><td>13*</td><td>_____</td></tr> <tr><td>21*</td><td>_____</td></tr> <tr><td>24*</td><td>_____</td></tr> <tr><td>25*</td><td>_____</td></tr> <tr> <td>SUM _____</td> <td>+ _____ = </td> </tr> </table>	RATER 1	RATER 2	11*	_____	13*	_____	21*	_____	24*	_____	25*	_____	SUM _____	+ _____ = 	<p>2. SOCIAL INTEREST (INT)</p> <table border="0"> <tr> <th>RATER 1</th> <th>RATER 2</th> </tr> <tr><td>4</td><td>_____</td></tr> <tr><td>9</td><td>_____</td></tr> <tr><td>15</td><td>_____</td></tr> <tr><td>17</td><td>_____</td></tr> <tr><td>19</td><td>_____</td></tr> <tr> <td>SUM _____</td> <td>+ _____ = </td> </tr> </table>	RATER 1	RATER 2	4	_____	9	_____	15	_____	17	_____	19	_____	SUM _____	+ _____ = 	<p>3. PERSONAL NEATNESS (NEA)</p> <table border="0"> <tr> <th>RATER 1</th> <th>RATER 2</th> </tr> <tr><td>1*</td><td>_____</td></tr> <tr><td>8</td><td>_____</td></tr> <tr><td>16*</td><td>_____</td></tr> <tr><td>30</td><td>_____</td></tr> <tr> <td>SUM _____</td> <td>+ _____ = </td> </tr> </table>	RATER 1	RATER 2	1*	_____	8	_____	16*	_____	30	_____	SUM _____	+ _____ =
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NEGATIVE FACTORS

<p>4. IRRITABILITY (IRR)</p> <table border="0"> <tr> <th>RATER 1</th> <th>RATER 2</th> </tr> <tr><td>2</td><td>_____</td></tr> <tr><td>6</td><td>_____</td></tr> <tr><td>10</td><td>_____</td></tr> <tr><td>12</td><td>_____</td></tr> <tr><td>29</td><td>_____</td></tr> <tr> <td>SUM _____</td> <td>+ _____ = </td> </tr> </table>	RATER 1	RATER 2	2	_____	6	_____	10	_____	12	_____	29	_____	SUM _____	+ _____ = 	<p>5. MANIFEST PSYCHOSIS (PSY)</p> <table border="0"> <tr> <th>RATER 1</th> <th>RATER 2</th> </tr> <tr><td>7</td><td>_____</td></tr> <tr><td>20</td><td>_____</td></tr> <tr><td>26</td><td>_____</td></tr> <tr><td>28</td><td>_____</td></tr> <tr> <td>SUM _____</td> <td>+ _____ = </td> </tr> </table>	RATER 1	RATER 2	7	_____	20	_____	26	_____	28	_____	SUM _____	+ _____ = 	<p>6. RETARDATION (RET)</p> <table border="0"> <tr> <th>RATER 1</th> <th>RATER 2</th> </tr> <tr><td>5</td><td>_____</td></tr> <tr><td>22</td><td>_____</td></tr> <tr><td>27</td><td>_____</td></tr> <tr> <td>SUM _____</td> <td>+ _____ = </td> </tr> </table>	RATER 1	RATER 2	5	_____	22	_____	27	_____	SUM _____	+ _____ =
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<p>TOTAL NEGATIVE FACTORS = SUM IRR + SUM PSY + SUM RET = </p>																																						

7. TOTAL PATIENT ASSETS (TOT) =

96 + TOTAL POSITIVE FACTORS - TOTAL NEGATIVE FACTORS =

*THESE ITEMS RECEIVE REFLECTED SCORES:

0 = 4 1 = 3 2 = 2 3 = 1 4 = 0

APPENDIX 7

PROBLEM SOLVING THERAPY

The purpose of this programme is to help people learn to solve problems that have caused them trouble. Many people do not know how to go about thinking of the ways to solve problems. There are a number of useful steps in the solving of problems. This programme is intended to teach you these steps and to give you practice in mastering each of the steps.

The steps are :

1) Recognition of Problems

Problems are a part of real life. Everybody has them. Some people are just better at solving them than others. The first step in successful problem-solving is to learn how to recognize problems. In this first step, you will be given a number of exercises to ^{give} you practice to be better at recognizing problems.

2) Definitions of Problems

After you learn how to better recognize problems, you will be given practice in how to define problems clearly by learning how to find out about problems and their solution.

3) Alternative Ways of Solving Problems

The third and possibly most important step in problem-solving, is looking at alternate ways of solving problems.

There may be more ways of solving a problem than one. Some of the ways may be clearly better than other ways. To learn this step you will practice thinking about alternate ways to solve problems.

4) Deciding Which Solution is the Best Way to Solve the Problem

The final step you'll learn is how to evaluate different solutions to problems, and try to make a decision.

In this step you will get practice in looking at the pros and cons of various solutions to problems, and trying to decide which one is best.

APPENDIX 8

PROBLEM-SOLVING THERAPY PROGRAMME

Four Stages:

- 1) The ability to recognize problems.
- 2) The ability to define problems.
- 3) The ability to think of alternative solutions to problems.
- 4) The ability to decide which of the alternative solutions is the best way to solve the problem.

Each slide in an exercise to be presented for 10 seconds.

STAGE 1 Recognition of Problems

Exercise 1

Intended to give the subjects an experience in paying attention to what they see, as a means of being better able to recognize problems when they occur.

A series of slides, depicting a changing environment, are shown. The group is then asked questions about the slides to test their attention to them.

Notes for group leader. Refer to the women in the slides as either the long and short haired woman or their names which are Heather and Jenny.

Questions	Answer
How many people in room in 1st slide ?	2
How many people in room in last slide ?	2
Did the seated woman have long or short hair ?	Long
Where were Jenny's hands when she entered the room ?	In her pockets
Where were Jenny's hands when she sat down ?	Out of her pockets or in her lap
What is on the table ?	A piece of paper
What happens to it ?	Heather shows Jenny the paper. Jenny takes the paper and looks at it, hands it back to Heather who goes towards the door with the

paper in her
hand

If the group members can only give short answers ask the following instead of the last question:

Does Heather give the paper to Jenny ?	Yes
Do they both look at the paper together ?	Yes
Who has the paper in the last slide ?	Heather
Does anyone go towards the door to leave the room ?	Yes Heather

Exercise 2 Memory for Faces

Attempt to train attentiveness to other people as another means of training ability to recognize problems.

The group is shown a slide of a group of people. The next slide shows a new group of people with one familiar face from the earlier group. The subject's task is to recognize the familiar face. Everyone in the group is asked individually which person was in both slides. In the third slide a new group is shown and in slide 4 there is another group containing 2 people from slide 3. The subjects are again asked to identify which people were in both slides.

Exercise 3 Magazine Faces

The subjects are shown 5 pictures, from magazines, of people experiencing different emotions (e.g. happiness, sadness). They

are then asked individually or as a group to describe the emotion. After doing this they are asked to make up a story about why the person in the picture is experiencing the emotion. This is intended to highlight, for the subjects, the importance of recognising possible interpersonal problems concerning others' feelings.

Exercise 4 Finding Problems

The group is shown photos and slides of people in real life situations. Their task is to identify the problem. This is meant to give the subject some experience in the recognition of problems.

In the 3 photos the problem is forgetting to take keys out of the lock so anyone could get in to the house and the person may need the other keys on the ring.

In the first 3 slides the problem is not having the right money for the parking meter so not putting any in but risking getting a parking ticket.

In slides 4 and 5 the problem is that there is only one piece of cake left between 4 people.

STAGE 2 Definition of Problems - practice in seeking information about problems.

Exercise 5 Thirty Questions

The group tries to find out what problem the therapist is thinking about by asking questions which will only be answered by 'yes' or 'no'. The therapist thinks of 2 problems and 1 occupation. The problems are finding a job and being late for an appointment. The occupation is a fireman. The group are not restricted to 30 questions.

The task is intended to teach the subjects how to gather information as one aspect of the ability to define problems. The ability to define problems is dependent on being able to gather information about the problem in an organized and systematic way. The exercise also draws attention to the function of language as communication as it forces the subject to frame his or her questions in an unambiguous and precise way.

Exercise 6 Finding out about people

This exercise is intended to teach subjects how to seek information about other people as part of the ability to define problems. It is explained to the group that being able to discover what people, important to you, think is helpful in solving problems as others' thoughts and feelings are frequently involved in the subject's interpersonal problems.

The group listens to 3 dialogues on tape which illustrates various ways that people can find out what other people are thinking and feeling. The 3 ways illustrated are:

- 1) Asking direct questions about what they might be thinking and feeling.
- 2) Indirectly bringing up the subject that you want information on.
- 3) Not taking the word of a 3rd party about the person in whom you are interested but interacting with the person directly.

After each dialogue the subjects are asked in which ways the people on the tape found out how other people were thinking and feeling. After all the dialogues have been heard the group are asked questions to see if they have learnt the different ways of getting information.

Dialogues.

- 1) Two women talking about adoption. First woman finds out how her husband feels about adoption by asking him directly.
- 2) A man's car has broken down and he indirectly asks a friend for a lift into town.
- 3) A girl does not take another person's word on why a third person has taken her scissors without asking but asks the third person herself.

Questions afterwards.

- 1) Is asking somebody what he thinks about something finding out about people directly or indirectly ?
- 2) How would you go about finding out something about someone indirectly: that is, without coming right out and asking them ?
- 3) A friend tells you that another person is not trustworthy. How would you find out if the other person is untrustworthy without taking your friend's word ?

STAGE 3 Alternative Solutions

Exercise 7 Finding Alternatives

The group tries to find alternative solutions to 4 interpersonal problems. They look at a drawing of an interpersonal problem and then at a drawing of the resolution of the problem. The group is then shown a number of drawings containing different solutions (2 or more drawings to a solution) to the problem and has to put the drawings of each solution in the proper logical order. This exercise is meant to give the subject graphic practice in recognizing that there are different solutions to the same problem.

The alternative solutions to a problem are given to either one member of the group or two working together and for each solution they have to put the pictures in the logical order.

This involves picking out the pictures for one solution from the others. The four sets of pictures are Loneliness, Finding a job, Making up after a quarrel, Finding a girlfriend.

<u>PROBLEM</u>	<u>RESOLUTION</u>	<u>ALTERNATIVE SOLUTIONS</u>
Man sitting thinking I'm lonely	Same man on phone saying 'A party etc'	<ol style="list-style-type: none"> 1) Two pictures show him meeting people at a church social club. 2) One picture shows him inviting a co-worker for a drink; the other when they decide to go to the cinema. 3) Lends neighbour lawn mower and later neighbour invites him to dinner.
Girl with no money	Girl opening pay packet	<ol style="list-style-type: none"> 1) Secretarial course. 2) Looking in paper for a job. 3) Job Centre. Ringing about job. Going for interview. Last 2 can also follow on from looking in paper.
A couple after a quarrel	'Let's go out to celebrate'	<ol style="list-style-type: none"> 1) Man on phone saying he's sorry. Woman on phone saying she's sorry too. 2) Man buying present. Both partners have presents for each other. 3) Wife suggests going to a marriage counsellor. They go to a marriage counsellor.
Man on his own, everyone else in pairs	Couple having dinner	<ol style="list-style-type: none"> 1) Visiting sister and meeting her roommate. 2) Seeing notice advertising a dance.

- 3) Going to a health club.
- 4) Being invited to join a friend who is sitting with some girls.

The group leader can guide the group members if they have difficulty and make the point that there are different ways of solving problems or different paths to a common goal. Finally the pictures should be lined up with the problem first, the different sets of solutions and then the resolution.

Exercise 8 Creating Alternatives

The subjects generate their own solutions to given problems. There are 3 problems: Getting along with your boss; Amusing yourself when alone; Changing the annoying behaviour of a friend.

The group are presented with problems singly and asked to write down as many solutions as they can think of to each of the problems. This exercise is intended to give the subject practice in thinking of (rather than recognizing, as in Exercise 7) alternative solutions to problems.

STAGE 4 Which alternative solution is best

Exercise 9 Impulsivity - Reflection Slides

Slides showing people coping with 3 problem situations. Firstly in an impulsive, ineffective way and then more

reflectively and effectively. Afterwards the group is asked 4 questions to determine how well they have learned the difference between an impulsive and a reflective solution. The exercise is meant to demonstrate that the initial, frequently impulsively chosen solution to a problem is often not the best and that it is better to wait and reflect before taking action.

Slides 1-2 Filling application for leave form. In the first slide the person has had to cross out 'recreation' and replace with 'long service' and does not leave enough room to fill in his address. In the 2nd slide he has not had to cross out anything and has left enough room to complete the address.

Slides 3-4 Getting change and claiming been short changed without counting change.

Slides 5-6 Counts change and realizes has not been short changed.

Slides 7-9 Two women sitting on bench talking. When they leave one forgets her bag. Ask what she could done to prevent this happening.

Questions afterwards:

- 1) Is renting a unit for \$400 a month, when you earn \$4 an hour an impulsive or reflective solution to the problem of finding a place to live ?
- 2) Is making up a shopping list before going to a supermarket reflective or impulsive ?

3) A company sends you a credit card. Is going out the same day and charging \$300 worth of clothing on the card reflective or impulsive ?

4) Is having a set routine for doing housework that you follow every week reflective or impulsive ?

Exercise 10 Decision Faces

The group is shown 3 sets of slides of people in situations where they must make a decision between 2 choices and list the advantages and disadvantages of each. Then each subject is asked to say which choice s/he would make. This is to give subjects practice in considering the advantages and disadvantages of alternative solutions to problems as an aid to becoming a better problem-solver.

Slides 1-4 Finding a wallet and then coming across someone searching for his wallet. Decision - to return wallet or not ?

Slides 5-7 Whether or not to allow someone else to use pay phone when their reason for using it seems important or carry on with the call you have paid for ?

Slides 8-10 Whether to go bush walking or play cricket ?

Exercise 11 Decision Tapes

The same as Exercise 10 but tapes are used for variety and to give further practice via an audio rather than a visual modality.

Decisions.

- 1) Whether to go to a film or a party ?
- 2) Whether to take a poorly paid job that is available or wait for a better paid job that may not materialize ?
- 3) Whether to rent a small house now or wait till a bigger one is built ?

Exercise 12 Plays

This is to give the group practice in all 4 stages of problem-solving. Five problem situations are presented on tape. The group have to identify the problem, indicate how the people in the problem situation might be feeling, ask questions to get information about possible solutions to the problem, generate different solutions to the problem, consider the advantages and disadvantages of each solution and finally choose what seems to be the best possible solution.

Problems:

- 1) Bored wife whose husband works nights.
- 2) Dispute between roommates.
- 3) Speech anxiety.

4) Loneliness.

5) Snoring.

APPENDIX 9
Individual Scores of Problem-Solving Tests and NOSIE-30s

GRP	PRE-TREATMENT							POST-TREATMENT							FOLLOW-UP						
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>N30</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>N30</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>N30</u>
1	0	0	0	0	0	0	136	2	1	2	0	0	0	160	0	0	0	0	0	0	150
1	0	0	0	0	1	0	116	0	2	1	0	1	0	102	1	1	1	1	1	1	141
1	4	5	4	2	1	1	142	6	3	10	5	2	1	169	5	1	2	2	1	2	139
1	6	3	15	2	2	2	92	7	3	22	3	2	9	99	7	3	17	2	2	5	92
1	0	0	0	0	0	0	142	0	0	0	0	0.5	0	136	1	0	0	0	0	0	160
1	1	0	1	0	0	0	122	1	1	0	0	0	0	118	0	0	0	0	0	0	131
1	2	4	6	6	0	0	86	5	5	1	3	1	4	115	5	1	2	2	1	2	118
1	7	0	2	4	1	0	103	3	2	3	2	0	1	97	4	3	2	2	1	1	123
2	1	1	1	1	1	0	158	2	2	1	0	0	2	146	0	0	2	0	0.5	0	158
2	5	3	4	3	0.5	1	182	6	4	13	5	1	3	171	12	12	22	1	1.5	3	192
2	3	2	7	5	1	2	124	2	4	3	2	1.5	3	160	3	3	3	2	1	2	144
2	0	0	0	0	0	0	139	0	1	2	1	2	0	142	0	1	1	0	0	1	143
2	0	0	0	2	1.5	0	129	0	1	3	2	0.5	1	161	1	1	0	4	0.5	2	179
2	0	1	2	1	0.5	0	123	1	3	2	2	0.5	1	119	0	2	0	1	1	1	144
2	0	0	1	0	0	0	85	1	2	1	0	0.5	0	73	0	0	0	0	0	0	75
2	2	2	1	0	0	0	112	2	3	3	0	0.5	1	122	3	1	2	0	0.5	3	111
3	0	0	0	0	0	0	166	0	0	0	0	0.5	0	158	0	0	0	0	0	0	106
3	1	0	1	1	0	0	182	2	0	0	0	0.5	0	174	1	0	0	0	1	0	198
3	0	3	11	4	1.5	1	98	4	4	6	2	1	2	139	0	1	3	1	1	1	132
3	1	2	7	0	1	1	135	2	3	2	4	1.5	2	147	2	3	5	1	1.5	2	167
3	2	3	4	3	0	1	127	2	2	2	2	0.5	0	157	3	1	1	2	0.5	1	173
3	0	0	0	0	0	0	110	0	0	0	0	0	0	124	0	0	0	0	0	0	120
3	3	1	0	0	1	0	132	1	0	0	1	0.5	0	107	0	0	0	0	0	0	104
3	2	0	5	6	0	0	148	3	3	6	3	1	4	118	2	3	1	2	1	2	128
3	1	2	1	2	0	1	82	2	4	7	5	1.5	2	112	3	5	2	1	1	1	109
3	1	0	5	7	0.5	0	148	1	0	4	8	0.5	0	158	1	0	5	6	0.5	0	112

TESTS

- 1 = Recognition of Problem Situations
2 = Optional Thinking
3 = Social Means-Ends Problem-Solving
4 = Emotional Means-Ends Problem-Solving
5 = Awareness of Consequences
6 = Causal Thinking
N30 = NOSIE-30